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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,738	12/08/2000	Soon Ho Choi	2658-0247P	1195

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

DEO, DUY VU

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 11/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,738

Examiner

DuyVu n Deo

Applicant(s)

CHOI ET AL.

Art Unit

1765

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 13-15 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-12, 16-18, drawn to an apparatus, classified in class 156, subclass 345.1.
 - II. Claims 13-15, drawn to a method, classified in class 438, subclass 745.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions in group II and group I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be practiced another and materially different process such as developing a photoresist pattern with the UV light.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Joseph Kolasch on 10/1/02 a provisional election was made with traverse to prosecute the invention of apparatus, claims 1-12, 16-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-15

withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16-18 are apparatus claims but they depend on method claim 15, which is also not elected. Claims 16-18 should depend on apparatus claim. At this time they are considered to be depended on claim 1.

Claim 18 recites an apparatus, however, it doesn't describe any part of an apparatus but steps of a method.

Claim Objections

9. Claims 4, 5, 16, 17 are objected to because of the following informalities: claim 4 is the same as claim 16 and claim 5 is the same as claim 17. Since, at this time, claims 16 and 17

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considered depending on claim 1, they repeat the limitations of claims 4 and 5. Appropriate correction is required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1 are rejected under 35 U.S.C. 102(b) as being anticipated by Kinose (JP 10-22358).

US 5,915,396 is considered to be an accurate translation of JP 10-22358. A translation of JP 10-22358 will be provided upon applicant's request.

Kinose describes an apparatus comprising: an UV cleaner, and transportation robots 10 or 11 (claimed conveyor) to transport substrate to and from the UV cleaner (figures 4, 6, and 10; col. 5, line 55-col. 6, line 12).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 2, 4-7, 9-11, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinose and admitted prior art.

Unlike claimed invention, Kinose doesn't describe an apparatus that include both the UV cleaner and a wet etching unit. However, his apparatus is capable of providing both the UV and a wet etching unit because he teaches that processing units 5 and 6 would include UV cleaner, and chemical solution for cleaner (col. 5, line 55-65). He also teaches additional units can be added (col. 8, line 15-18) and the units of apparatus can be performing any other processes and may be arranged in any of various configuration (col. 14, line 36-35). Since a method of processing a LCD including requiring UV cleaner and wet etching is well known to one skilled in the art, as described in pages 1-3 of the specification, it would be obvious to one skilled in the art to modify Kinose's apparatus by including units such as UV cleaner and wet etching because as well known to one skilled in the art (shown in page 3 of specification) that it cost more time to move substrate to different apparatus for different step; therefore, it is more efficient to have all the steps of processing a substrate to be done within an apparatus including UV cleaner and wet etching units. Further, by eliminating moving of substrate from apparatus to another would reduce contamination on the substrate during transferring.

Referring to claims 2 and 7, since the transportation robots 10 and 11 are for transferring substrate, they would have to be for transferring substrate to and from the UV cleaner or transferring substrate from UV cleaner to the etching unit.

Referring to claims 4, 5, 10, 11, 16, and 17 admitted prior art also describe processing an LCD substrate including electrode terminals and wires (pages 1 and 2).

Referring to claim 9, it would be obvious to have a transporter or conveyor between the UV cleaner and the etching unit so that wafers can be transferred from one unit to another.

Referring to claims 12 and 18, Kinose also describes units such as a spin scrubber for washing substrate with water, a spin dryer for drying wafer (col. 8, line 45-48) and having other units including a tilt drain part, a de-ionized rinse part would be obvious as taught by admitted prior art in order to process an LCD with a reasonable expectation of success.

Claim Rejections - 35 USC § 103

14. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinose and admitted prior art as applied to claim 1 above, and further in view of Kizaki et al. (US 5,763,892).

Unlike claimed invention, above prior art doesn't describe an excimer UV light. Kizaki describes an UV irradiator for substrate treatment system such as an LCD using an excimer UV light (col. 1, line 15-26; col 8, line 17-22). It would be obvious for one skilled in the art to use an excimer UV light in light of Kizaki for wafer treatment because Kizaki teaches that it can be stabilized in an extremely short time after being turned on (col. 8, line 20-21).

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear how the UV cleaner is installed in the loader on the substrate having a plurality of cassettes.

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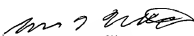
Allowable Subject Matter

17. Claim 8 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claim 8 would be allowable because Kinose doesn't describe the UV cleaner unit is installed in the loader having a plurality of cassettes. Kinose's UV cleaner unit is located outside of the loader and together with other processing units.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 703-305-0515.

DVD
October 30, 2002


BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
TECHNOLOGICAL CENTER 1700